

HW4

Due April 6th, 2020

Given a hexacopter as shown in the figure, please find

1. its allocation matrix.
$$\begin{bmatrix} f \\ \tau_x \\ \tau_y \\ \tau_z \end{bmatrix} = M \begin{bmatrix} f_1 \\ f_2 \\ f_3 \\ f_4 \end{bmatrix}.$$

2. its allocation matrix.
$$\begin{bmatrix} f \\ \tau_x \\ \tau_y \\ \tau_z \end{bmatrix} = M \begin{bmatrix} \omega_1^2 \\ \omega_2^2 \\ \omega_3^2 \\ \omega_4^2 \end{bmatrix}$$

(Note that the drag torque factor and the thrust force coefficient is $C_{\tau f}$ and k_f .)

